

REMARKS

Upon entry of this Amendment, Claims 1 to 3 and 5 to 22 are pending in the application. Claim 4 has been cancelled. Claims 21 and 22 have been allowed. Claims 1 to 14 and 20 have been rejected. Claims 15 to 19 were indicated to be allowable if amended to overcome the objections of the Examiner.

Claim 1 has been amended to delete the reference to the center portion. The claim has been amended to clarify that the motor is mounted between the inlet and the outlet. Dependent Claims 10 and 11 have been amended to add the center portion to correspond to the amendment of Claim 1. Independent Claims 20, 21 and 22 have been amended similarly to Claim 1 to eliminate the reference to the center portion.

Independent Claim 1 has been amended to clarify that one end of the blade is mounted on the center hub and that the rounded protrusion on the trailing edge of the blade is spaced apart from the end of the blade mounted on the center hub. Dependent Claims 2 and 7 have been amended to correspond to the amendment of Claim 1. Independent Claims 20, 21 and 22 have also been amended to clarify that one end of the blade is mounted on the center hub.

Claims 5 and 6 have been amended to clarify that the end of the blade opposite the center hub has a swept back tip. Claim 8 has been amended to call for a propeller formed by the blades and center hub having a diameter. Claim 15 has been amended to clarify that the grooves are on the inner side of the housing. The claim has further been amended to delete the reference to the angle of the grooves. Claim 16 has been amended to delete the reference

to the angled orientation of the grooves.

In the Office Action

(1) Claims 1 to 14 and 20 were rejected under 35 USC § 103 as being unpatentable over German Patent DE 3425502 in view of Bohanon, Sr. (U.S. Patent No. 4,445,426). The references have been discussed in detail in a previous Amendment and that discussion need not be repeated.

Independent Claim 1 has been amended to clearly define the protrusions on the trailing edge of the blades as being spaced apart from the end of the blades mounted on the center hub. Thus, the protrusions are not at the end of the blades mounted on the center hub.

In contrast, in the German reference, the protrusions of the blades are at the end of the blades mounted on the center hub. The positioning of the protrusions at the end of the blades mounted on the hub creates an enlarged work volume in the area directly in front of the hub. This increased work volume is necessary to achieve the object of the German patent, namely to create an axial fan which has a hub consisting of a disc but which shows considerably lower aerodynamics losses adjacent the hub. Thus, it would not be obvious or efficient to move the protrusions away from the end of the blades mounted on the hub.

In regard to Claim 20, the Examiner indicates that "it would have been an obvious matter of design choice for the fan blades of the German patent to have a width adjacent the first end to be less than the width adjacent the second end particularly in absence of a statement regarding critically or new and unexpected results".

However, Applicants' respectfully disagree. One (1) of the advantages of the axial fan of the German reference is the enlarged work volume of the blades adjacent the hub. It is important to the efficient operation of the axial fan that the blades have a large surface area adjacent the smaller hub. Thus, having a blade with a width adjacent the first end less than a width adjacent the second end would not be a matter of design choice. For the German patent, it would not be obvious or efficient to use a blade having a smaller width near the center hub.

Furthermore, the smaller width of the blade at the end mounted on the center hub in Applicants' fan helps to create the overall shape of the blade such that when the blades are rotating, the axial velocity of air coming off the blades is essentially constant along most of the length of the blades (see specification at page 10, lines 15 to 25).

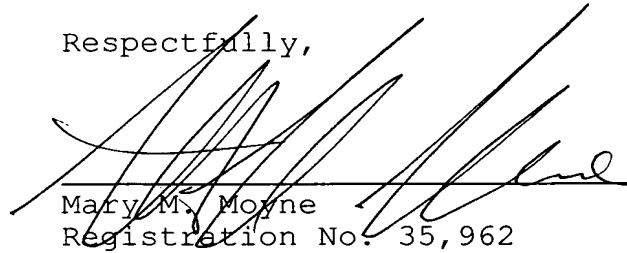
Applicants believe that amended independent Claims 1 and 20 are unobvious to one skilled in the art and patentable over the German patent in view of Bohanon, Sr. Further, dependent Claims 2, 3 and 5 to 19, as depending from patentable base Claim 1, are unobvious to one skilled in the art and patentable over the above cited references.

(2) Claims 1 to 22 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The claims have been amended to correct the technical informalities cited by the Examiner. Thus, this rejection is believed to be overcome.

Aerotech 4.1-5  
Appl. No. 10/657,620  
Amdt. dated May 16, 2005  
Reply to Office Action of February 23, 2005

Applicants believe that Claims 1 to 3 and 5 to 22  
are now in condition for allowance. Notice of Allowance is  
requested.

Respectfully,



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